

**Stack F405 V3 ICM42688 AM32 75A**

**User manual**



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## 1. Product overview

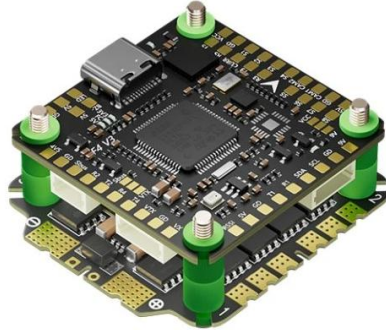


Fig.1. Pilotix F405 V3 ICM42688 AM32 75A

The F405 V3 ICM42688 AM32 75A is an FPV flight controller and ESC combination featuring an STM32F405 microcontroller and an AT32F421K8U7 ESC microcontroller. It supports Betaflight firmware, incorporates an ICM42688-P gyro, and includes built-in sensors such as an accelerometer and SPL06 barometer for enhanced flight stability. Operating within a temperature range of -20 to 40 °C, it has a humidity tolerance of 20-95% RH and relies on passive cooling through natural airflow. The device is designed with a compact footprint, featuring a weight of 25.4 grams and dimensions suitable for various drone applications.

## 2. ESC Installation & Wiring

The ESC is designed to handle high current loads. Pay close attention to the power leads.

### ***Wiring Steps:***

1. Power Input: Solder high-quality XT60/XT90 leads to the "+" and "-" pads. Ensure the polarity is correct.
2. Capacitor: Solder a high-voltage capacitor to the power pads. This is mandatory for 3S-8S builds to filter voltage spikes.
3. Motor Pads: Solder motor wires to the pads on the left (3 & 4) and right (1 & 2).
4. Link to FC: Connect the 8-pin harness to the socket on the top edge. This transmits power, motor signals (S1-S4), and telemetry to the FC.

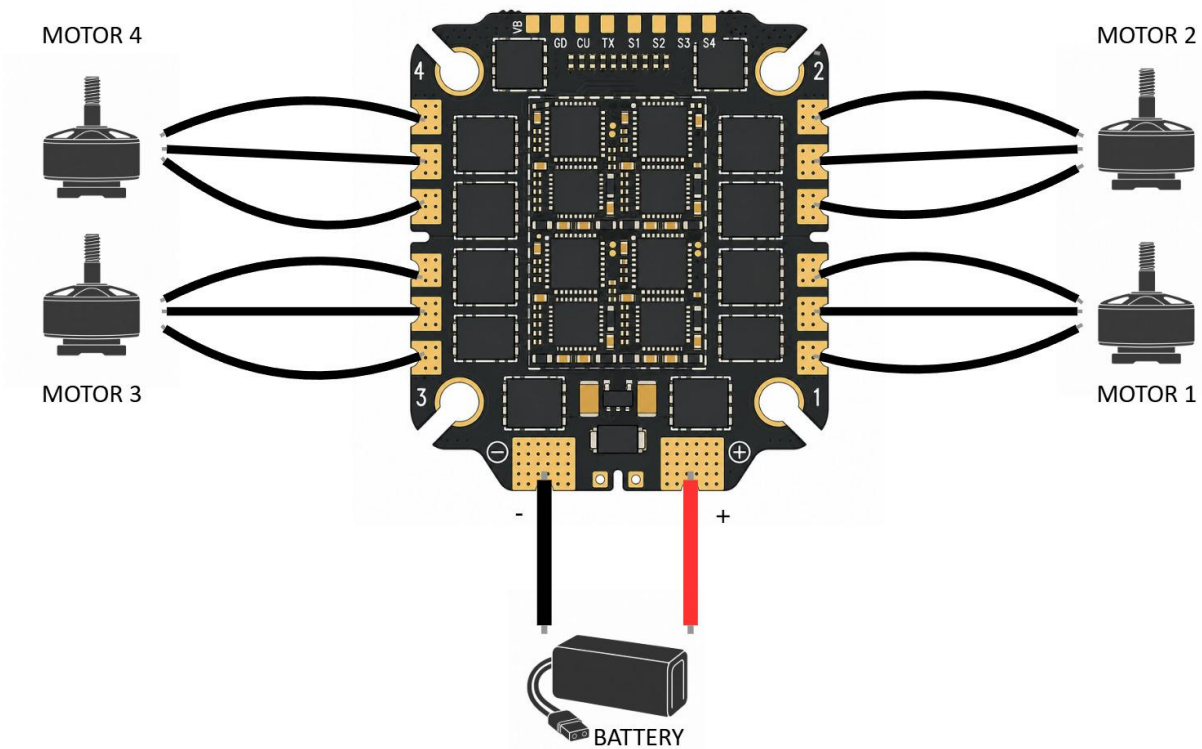


Fig.2. ESC installation &amp; wiring

### 3. Flight Controller (FC) Wiring

The F405 V3 FC offers a "Plug-and-Play" experience for many peripherals.

#### Receiver & Serial Ports (UARTs):

- UART 1: Dedicated for GPS (TX to R1, RX to T1).
- UART 2: Primary Receiver port (ELRS/CRSF).
- UART 3: ESC Connection / Telemetry.
- UART 4: VTX Control.
- UART 5: Internal Bluetooth.

#### Video & Cameras:

- Dual Camera Support: Connect Camera 1 and Camera 2 to the CAM1 and CAM2 pads.
- VTX Voltage Selection:
  - Solder the jumper to VCC for 3-4S setups.
  - Solder the jumper to 9V for 6S-8S setups (recommended to protect VTX from high voltage).
- Digital Systems: For DJI O3 or Walksnail, use the dedicated SBUS/TX4/RX4 pads or connector.

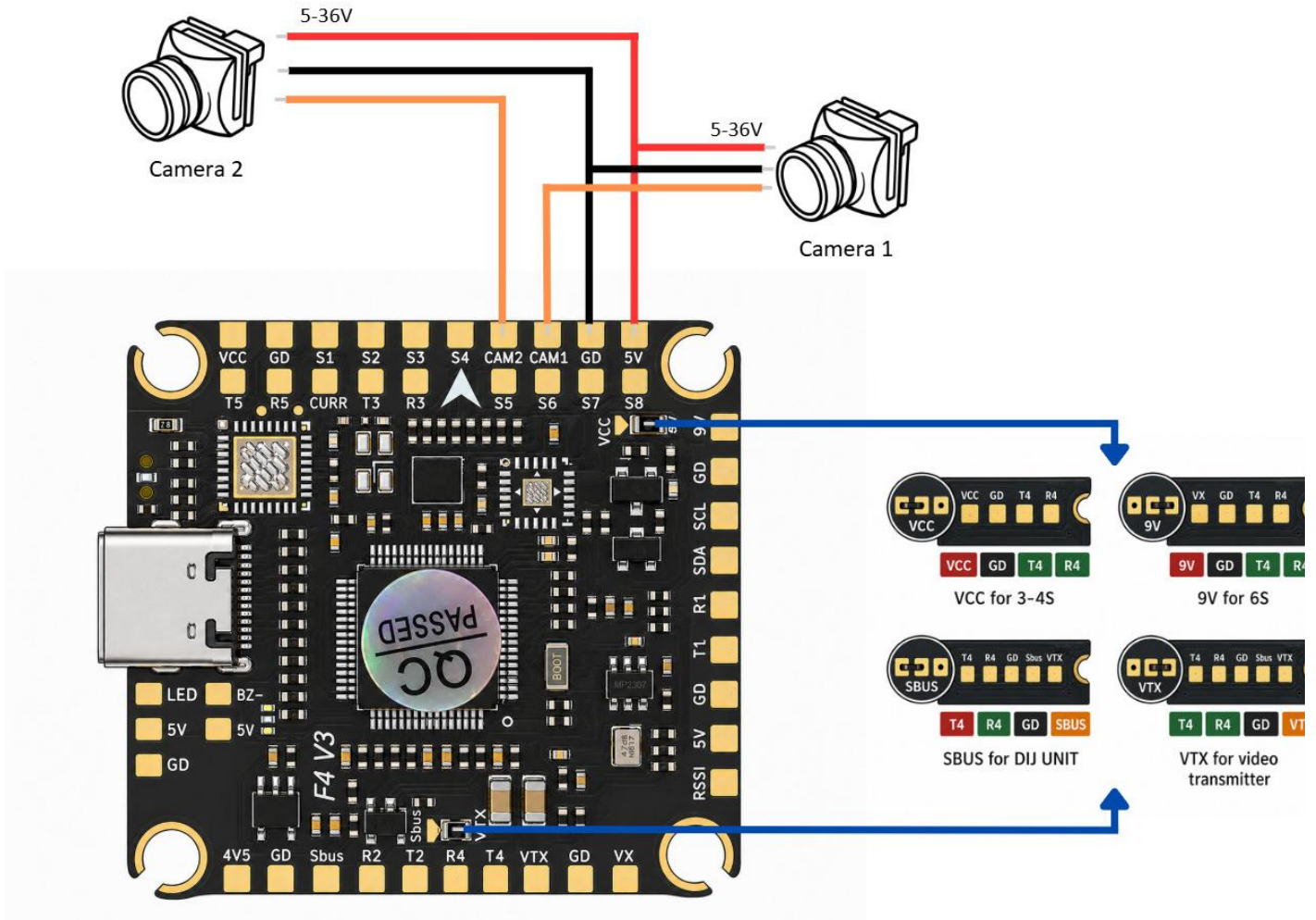


Fig.3. FC wiring diagram

## 4. Safety & Usage Rules

1. **Voltage Check:** Before connecting your VTX, verify the voltage jumper (9V vs VCC). Connecting a 5V/9V VTX to VCC on an 8S battery will cause immediate failure.
2. **Smoke Stopper:** Always use a current-limiting device for the first power-on.
3. **Firmware Updates:** Use [esc-configurator.com](http://esc-configurator.com) for the AM32 ESC.
4. **Mounting:** Use the provided anti-vibration grommets. High-current ESCs create electromagnetic noise; keep the FC physically separated by at least 2-3mm from the ESC.
5. An 75A ESC generates significant heat. Do not mount the stack in an enclosed, unventilated space.

## Contacts:

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